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1

SEQUENCE LISTING

<110> ITOH, YASUAKI
NISHI, KAZUNORI
OGI, KAZUHIRO
OHKUBO, SHOICHI
MOGI, SHINICHI
NOGUCHI, YUKO

<120> NOVEL PEPTIDE AND DNA THEREOF

<130> 56804-46342

<140> 10/019,455
<141> 2001-12-28

<160> 53

<170> PatentIn Ver. 2.1

<210> 1
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<220>

<223> Description of Artificial Sequence: Primer

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cgcagaagaa gtcaatatcc gtggtg

26

<210> 2

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 2

cagcgtgtgt accaggaagc taccaa

26

<210> 3

<211> 131

<212> PRT

<213> Homo sapiens

<400> 3

Met Ala Arg Ser Leu Val Cys Leu Gly Val Ile Ile Leu Leu Ser Ala
1 5 10 15

Phe Ser Gly Pro Gly Val Arg Gly Gly Pro Met Pro Lys Leu Ala Asp
20 25 30

Arg Lys Leu Cys Ala Asp Gln Glu Cys Ser His Pro Ile Ser Met Ala
35 40 45

Val Ala Leu Gln Asp Tyr Met Ala Pro Asp Cys Arg Phe Leu Thr Ile
 50 55 60

His Arg Gly Gln Val Val Tyr Val Phe Ser Lys Leu Lys Gly Arg Gly
 65 70 75 80

Arg Leu Phe Trp Gly Gly Ser Val Gln Gly Asp Tyr Tyr Gly Asp Leu
 85 90 95

Ala Ala Arg Leu Gly Tyr Phe Pro Ser Ser Ile Val Arg Glu Asp Gln
 100 105 110

Thr Leu Lys Pro Gly Lys Val Asp Val Lys Thr Asp Lys Trp Asp Phe
 115 120 125

Tyr Cys Gln
 130

<210> 4

<211> 384

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(384)

<400> 4

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 Met Ala Arg Ile Leu Leu Leu Phe Leu Pro Gly Leu Val Ala Val Cys
 1 5 10 15

gct gtg cat gga ata ttt atg gac cgt cta gct tcc aag aag ctc tgt 96
 Ala Val His Gly Ile Phe Met Asp Arg Leu Ala Ser Lys Lys Leu Cys
 20 25 30

gca gat gat gag tgt gtc tat act att tct ctg gct agt gct caa gaa 144
 Ala Asp Asp Glu Cys Val Tyr Thr Ile Ser Leu Ala Ser Ala Gln Glu
 35 40 45

gat tat aat gcc ccg gac tgt aga ttc att aac gtt aaa aaa ggg cag 192
 Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln
 50 55 60

cag atc tat gtg tac tca aag ctg gta aaa gaa aat gga gct gga gaa 240
 Gln Ile Tyr Val Tyr Ser Lys Leu Val Lys Glu Asn Gly Ala Gly Glu
 65 70 75 80

ttt tgg gct ggc agt gtt tat ggt gat ggc cag gac gag atg gga gtc 288
 Phe Trp Ala Gly Ser Val Tyr Gly Asp Gly Gln Asp Glu Met Gly Val
 85 90 95

gtg ggt tat ttc ccc agg aac ttg gtc aag gaa cag cgt gtg tac cag 336
 Val Gly Tyr Phe Pro Arg Asn Leu Val Lys Glu Gln Arg Val Tyr Gln
 100 105 110

gaa gct acc aag gaa gtt ccc acc acg gat att gac ttc ttc tgc gag 384
 Glu Ala Thr Lys Glu Val Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 115 120 125

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 <211> 18
 <212> PRT
 <213> Homo sapiens

<400> 5
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 1 5 10 15

Ala Val

<210> 6
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 6
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 1 5 10 15

Ala Val His Gly Ile Phe Met Asp Arg Leu Ala Ser Lys Lys Leu Cys
 20 25 30

Ala Asp Asp Glu Cys Val Tyr Thr Ile Ser Leu Ala Ser Ala Gln Glu
 35 40 45

Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln
 50 55 60

Gln Ile Tyr Val Tyr Ser Lys Leu Val Lys Glu Asn Gly Ala Gly Glu
 65 70 75 80

Phe Trp Ala Gly Ser Val Tyr Gly Asp Gly Gln Asp Glu Met Gly Val
 85 90 95

Val Gly Tyr Phe Pro Arg Asn Leu Val Lys Glu Gln Arg Val Tyr Gln
 100 105 110

Glu Ala Thr Lys Glu Val Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 115 120 125

<210> 7
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

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<210> 8
 <211> 24
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 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 8
 aacttgggtga aggagcagcg tgta 24

<210> 9
 <211> 130
 <212> PRT
 <213> Mus sp.

<400> 9
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 1 5 10 15

Ser Gly Pro Ser Arg Ala Asp Arg Ala Met Pro Lys Leu Ala Asp Trp
 20 25 30

Lys Leu Cys Ala Asp Glu Glu Cys Ser His Pro Ile Ser Met Ala Val
 35 40 45

Ala Leu Gln Asp Tyr Val Ala Pro Asp Cys Arg Phe Leu Thr Ile Tyr
 50 55 60

Arg Gly Gln Val Val Tyr Val Phe Ser Lys Leu Lys Gly Arg Gly Arg
 65 70 75 80

Leu Phe Trp Gly Gly Ser Val Gln Gly Gly Tyr Tyr Gly Asp Leu Ala
 85 90 95

Ala Arg Leu Gly Tyr Phe Pro Ser Ser Ile Val Arg Glu Asp Leu Thr
 100 105 110

Leu Lys Pro Gly Lys Ile Asp Met Lys Thr Asp Gln Trp Asp Phe Tyr
 115 120 125

Cys Gln
 130

<210> 10
 <211> 384
 <212> DNA
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<220>
 <221> CDS
 <222> (1)..(384)

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 1           5           10          15

gcc ggg cat ggt gta ttt atg gat aaa ctt tct tct aag aag ttg tgt 96
Ala Gly His Gly Val Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys
 20          25          30

gct gat gag gag tgt gtc tat act att tct ctg gca aga gca cag gaa 144
Ala Asp Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu
 35          40          45

gat tac aat gcc cca gac tgt agg ttc atc gat gtc aag aaa ggg cag 192
Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asp Val Lys Lys Gly Gln
 50          55          60

cag atc tat gtt tac tcc aag ctg gta aca gaa aac gga gct gga gag 240
Gln Ile Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Glu
 65          70          75          80

ttt tgg gct ggc agt gtt tat ggt gac cac cag gat gag atg gga att 288
Phe Trp Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile
 85          90          95

gta ggt tat ttc ccc agc aac ttg gtg aag gag cag cgt gta tac cag 336
Val Gly Tyr Phe Pro Ser Asn Leu Val Lys Glu Gln Arg Val Tyr Gln
 100         105         110

gag gcc acc aag gag atc cca acc acg gat att gac ttc ttc tgt gaa 384
Glu Ala Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 115         120         125

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<210> 11
<211> 18
<212> PRT
<213> Mus sp.

<400> 11
Met Ala Arg Ile Leu Ile Leu Leu Leu Gly Gly Leu Val Val Leu Cys
1 5 10 15

Ala Gly

<210> 12
<211> 128
<212> PRT
<213> Mus sp.

<400> 12
 Met Ala Arg Ile Leu Ile Leu Leu Leu Gly Gly Leu Val Val Val Leu Cys
 1 5 10 15
 Ala Gly His Gly Val Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys
 20 25 30

Ala Asp Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu
 35 40 45

Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asp Val Lys Lys Gly Gln
 50 55 60

Gln Ile Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Glu
 65 70 75 80

Phe Trp Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile
 85 90 95

Val Gly Tyr Phe Pro Ser Asn Leu Val Lys Glu Gln Arg Val Tyr Gln
 100 105 110

Glu Ala Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 115 120 125

<210> 13

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 13

accacagtcc atgccatcac

20

<210> 14

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 14

tccaccaccc tggctgtta

20

<210> 15

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 15

ctaccgcgtg cgcccatcat caga

24

<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 16
gggaggccgg tttgggttggg gtaga 25

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 17
cacactggta agtggggcaa gaccg 25

<210> 18
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 18
ggattgtgtt gtttcagggt tcggg 25

<210> 19
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 19
accccccgtggc ccctctggg 19

<210> 20
<211> 24
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 20
atctcacctt tagccccctgg aatg                                24

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 21
gccgggcatg gtgtatTTTAT                                20

<210> 22
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 22
gatctccTTG gtggcctcCT ggtat                                25

<210> 23
<211> 330
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(330)

<400> 23
cat gga ata ttt atg gac cgt cta gct tcc aag aag ctc tgt gca gat      48
His Gly Ile Phe Met Asp Arg Leu Ala Ser Lys Lys Leu Cys Ala Asp
  1           5           10           15
                                         15

gat gag tgt gtc tat act att tct ctg gct agt gct caa gaa gat tat      96
Asp Glu Cys Val Tyr Thr Ile Ser Leu Ala Ser Ala Gln Glu Asp Tyr
  20          25          30

aat gcc ccg gac tgt aga ttc att aac gtt aaa aaa ggg cag cag atc      144
Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln Gln Ile
  35          40          45

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tat gtg tac tca aag ctg gta aaa gaa aat gga gct gga gaa ttt tgg 192
 Tyr Val Tyr Ser Lys Leu Val Lys Glu Asn Gly Ala Gly Glu Phe Trp
 50 55 60

gct ggc agt gtt tat ggt gat ggc cag gac gag atg gga gtc gtg ggt 240
 Ala Gly Ser Val Tyr Gly Asp Gly Gln Asp Glu Met Gly Val Val Gly
 65 70 75 80

tat ttc ccc agg aac ttg gtc aag gaa cag cgt gtg tac cag gaa gct 288
 Tyr Phe Pro Arg Asn Leu Val Lys Glu Gln Arg Val Tyr Gln Glu Ala
 85 90 95

acc aag gaa gtt ccc acc acg gat att gac ttc ttc tgc gag 330
 Thr Lys Glu Val Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 100 105 110

<210> 24
 <211> 110
 <212> PRT
 <213> Homo sapiens

<400> 24
 His Gly Ile Phe Met Asp Arg Leu Ala Ser Lys Lys Leu Cys Ala Asp
 1 5 10 15

Asp Glu Cys Val Tyr Thr Ile Ser Leu Ala Ser Ala Gln Glu Asp Tyr
 20 25 30

Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln Gln Ile
 35 40 45

Tyr Val Tyr Ser Lys Leu Val Lys Glu Asn Gly Ala Gly Glu Phe Trp
 50 55 60

Ala Gly Ser Val Tyr Gly Asp Gly Gln Asp Glu Met Gly Val Val Gly
 65 70 75 80

Tyr Phe Pro Arg Asn Leu Val Lys Glu Gln Arg Val Tyr Gln Glu Ala
 85 90 95

Thr Lys Glu Val Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 100 105 110

<210> 25
 <211> 330
 <212> DNA
 <213> Mus sp.

<220>
 <221> CDS
 <222> (1)..(330)

<400> 25
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 His Gly Val Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala Asp
 1 5 10 15

gag gag tgt gtc tat act att tct ctg gca aga gca cag gaa gat tac 96
 Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp Tyr
 20 25 30

aat gcc cca gac tgt agg ttc atc gat gtc aag aaa ggg cag cag atc 144
 Asn Ala Pro Asp Cys Arg Phe Ile Asp Val Lys Lys Gly Gln Gln Ile
 35 40 45

tat gtt tac tcc aag ctg gta aca gaa aac gga gct gga gag ttt tgg 192
 Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Glu Phe Trp
 50 55 60

gct ggc agt gtt tat ggt gac cac cag gat gag atg gga att gta ggt 240
 Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile Val Gly
 65 70 75 80

tat ttc ccc agc aac ttg gtg aag gag cag cgt gta tac cag gag gcc 288
 Tyr Phe Pro Ser Asn Leu Val Lys Glu Gln Arg Val Tyr Gln Glu Ala
 85 90 95

acc aag gag atc cca acc acg gat att gac ttc ttc tgt gaa 330
 Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 100 105 110

<210> 26
 <211> 110
 <212> PRT
 <213> Mus sp.

<400> 26
 His Gly Val Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala Asp
 1 5 10 15

Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp Tyr
 20 25 30

Asn Ala Pro Asp Cys Arg Phe Ile Asp Val Lys Lys Gly Gln Gln Ile
 35 40 45

Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Glu Phe Trp
 50 55 60

Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile Val Gly
 65 70 75 80

Tyr Phe Pro Ser Asn Leu Val Lys Glu Gln Arg Val Tyr Gln Glu Ala
 85 90 95

Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 100 105 110

<210> 27
 <211> 40
 <212> DNA
 <213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Primer

<400> 27
cgaattccca ccatggcaag gatattgatt cttttgcttg 40

<210> 28
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 28
gtacagtcga cttcacagaa gaagtcaata tccgtggttg 40

<210> 29
<211> 923
<212> DNA
<213> Homo sapiens

<400> 29
gtcagagttc aagtaaaaac agaaaaaagg aagatggcaa gaatattgtt acttttcctc 60
ccgggtcttg tggctgtatg tgctgtcat ggaatattt tggaccgtct agcttccaag 120
aagctctgtg cagatgtatg gtgtgtctat actatttctc tggctagtgc tcaagaagat 180
tataatgccc cgactgttag attcattaaac gttaaaaaaag ggcagcagat ctatgtgtac 240
tcaaagctgg taaaagaaaa tggagctgga gaattttggg ctggcagtgt ttatggtgat 300
ggccaggacg agatgggagt cgtgggttat ttccccagga acttggtcaa ggaacagcgt 360
gtgtaccagg aagctaccaa ggaagttccc accacggata ttgacttctt ctgcgagtaa 420
taaatttagtt aaaactgcaa atagaaagaa aacacccaaa ataaaagaaaa gagcaaaagt 480
ggccaaaaaa tgcatgtctg taattttggg ctgacgtttt aagaatttgt taccttacag 540
aagagcaagg gcttaggggt tggaggtggc agataaaaaga ggattttcaa ctcaaatctt 600
gttcctgtct ggcctggctc gcccacgagc tagagcgggg aaatgttgag ctcaaatggg 660
taaattgaga ccagaaaatt atttttcaa cctagagaat ctccttctac agggggatgc 720
atataacaga tcatgtatgt gtatgttattt ctaagtagta attcttccca gctcttgc 780
ttgccatata taaaataggt gggtcgtatg tcttccctt agacatgtatg ttttctactc 840
atttgtctct ctggccaatt gaattattaa taaaaggtct gtattatcaa agaaaaaaaaa 900
aaaaaaaaaa aaaaaaaaaaa aaa 923

<210> 30
<211> 947
<212> DNA
<213> Mus sp.

<400> 30
aagaaggaag atggcaagga tattgattct tttgcttggg ggccttggg ttctatgtgc 60
cgggcattgt gtatttatgg ataaaacttcc ttctaaagaag ttgtgtgcgg atgaggagtg 120
tgtctataact atttctctgg caagagcaca ggaagattac aatgccccag actgttaggt 180
catcgatgtc aagaaagggc agcagatcta ttgttactcc aagctggtaa cagaaaaacgg 240
agctggagag ttttggctg gcagtgtta tggtgaccac caggtgaga tgggaattgt 300
aggttatattc cccagcaact tggtaagga gcagcgtta taccaggagg ccaccaagga 360
gatcccaacc-acggatattg-acttctctg-tgaataagaa attaattaaa acagcagata 420
aacagaaaac accagtgtatg aagaagagaa gaagtggaaa taactgaacc tggatccg 480

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taccttcctg gctttatggt gtggcaggag gttggagctt gaaggtgcta agatatggaa 540
 attgtcaact cagtctgtt tactcttgc cccgtcttc caccaactgc gactaagtgc 600
 tgtgtgaatc atataaggta tttataaccc aataacttagc tttcagcag gagaatctt 660
 atttactcag tggatgaacat ataagggttt ttatctgttag ttatttctaa atggtcattc 720
 tccccagctc tgactccatg tccttaagct tgctgagttt gaagtcgtac ttttgggtgt 780
 gttttctgtt atttgtctt ctggcatgtt gaagtcgttta taatgtattt gtcgtatgtt 840
 ctcccttatttgc ttacttttttataatgtatgc ccttggatag aagaatgtt ggtataaaaac 900
 aagttttgtt actcccaaaa aaaaaaaaaaaa aaaaaaaaaaaa aaaaaaaaaaaa 947

<210> 31
 <211> 21
 <212> PRT
 <213> Mus sp.

<400> 31
 Val Lys Glu Gln Arg Val Tyr Gln Glu Ala Thr Lys Glu Ile Pro Thr
 1 5 10 15
 Thr Asp Ile Asp Cys
 20

<210> 32
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 32
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<210> 33
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 33
 cgaattccca ccatggcaag aatattgttta cttttcctc 39

<210> 34
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 34
 gtacagtgcgttatttcaca gaagaagtcaata tccgtgg 38

<210> 35
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 35
gtacagtgcga cttactcgca gaagaagtca atatccgtgg t

41

<210> 36
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 36
cgaattccca ccatggtgtg gtcccccagtg ctcctt

36

<210> 37
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 37
gtacagtgcga cctggcagta gaaatcccat tgatcggt

38

<210> 38
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 38
gtacagtgcga cctggcagta gaaatcccat tgatcggt

38

<210> 39
<211> 87
<212> PRT
<213> Rattus sp.

<400> 39
Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala Asp Glu Glu Cys Val Tyr

1

5

10

15

Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp Tyr Asn Ala Pro Asp Cys
 20 25 30

Arg Phe Ile Asn Val Lys Lys Gly Gln Gln Ile Tyr Val Tyr Ser Lys
 35 40 45

Leu Val Thr Glu Asn Gly Ala Gly Ala Phe Trp Ala Gly Ser Val Tyr
 50 55 60

Gly Asp His Gln Asp Glu Met Gly Ile Val Gly Tyr Phe Pro Ser Asn
 65 70 75 80

Leu Val Arg Glu Gln Arg Val
 85

<210> 40

<211> 261

<212> DNA

<213> Rattus sp.

<220>

<221> CDS

<222> (2)..(261)

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 Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala Asp Glu Glu Cys Val Tyr
 1 5 10 15

acc att tct ctg gca aga gca cag gaa gac tac aat gcc ccg gac tgt 97
 Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp Tyr Asn Ala Pro Asp Cys
 20 25 30

agg ttc atc aat gtc aag aaa ggg cag cag atc tat gtt tat tcc aag 145
 Arg Phe Ile Asn Val Lys Lys Gly Gln Gln Ile Tyr Val Tyr Ser Lys
 35 40 45

ctg gta aca gaa aat gga gct ggg gca ttc tgg gct ggc agt gtt tat 193
 Leu Val Thr Glu Asn Gly Ala Gly Ala Phe Trp Ala Gly Ser Val Tyr
 50 55 60

ggt gac cac cag gat gag atg gga att gtg ggt tat ttc ccc agc aac 241
 Gly Asp His Gln Asp Glu Met Gly Ile Val Gly Tyr Phe Pro Ser Asn
 65 70 75 80

ttg gtt aga gag caa cga gt 261
 Leu Val Arg Glu Gln Arg Val
 85

<210> 41

<211> 307

<212> DNA

<213> Rattus sp.

<220>

<221> CDS

<222> (22) .. (282)

<400> 41
gccgggcatg gtgtatTTAT g gat aaa ctt tct tct aag aag ttg tgt gca 51
Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala
1 5 10

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gat gag gag tgt gtc tat acc att tct ctg gca aga gca cag gaa gac 99
Asp Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp
15          20          25

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tac aat gcc ccg gac tgt agg ttc atc aat gtc aag aaa ggg cag cag 147
 Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln Gln
 30 35 40

atc tat gtt tat tcc aag ctg gta aca gaa aat gga gct ggg gca ttc 195
 Ile Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Ala Phe
 45 50 55

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tgg gct ggc agt gtt tat ggt gac cac cag gat gag atg gga att gtg 243
Trp Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile Val
       60          65          70

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ggt tat ttc ccc agc aac ttg gtt aga gag caa cga gta taccaggagg 292
Gly Tyr Phe Pro Ser Asn Leu Val Arg Glu Gln Arg Val
    75           80           85

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gccaccaagg agatc 307

<210> 42
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 42 caccaggatg agatggaaat tgtgggttat 30

<210> 43
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 43 gggttatttc cccagcaact tggtagaga 30

<210> 44
<211> 29
<212> DNA
<213> Artificial Sequence

<220>		
<223> Description of Artificial Sequence: Primer		
<400> 44		
agacacactc ctcatctgca cacaacctc		29
<210> 45		
<211> 30		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Description of Artificial Sequence: Primer		
<400> 45		
ctcctcatct gcacacaact tcttagaaga		30
<210> 46		
<211> 384		
<212> DNA		
<213> Rattus sp.		
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Met Ala Arg Ile Leu Ile Leu Leu Gly Gly Leu Val Ala Leu Cys		
1 5 10 15		
gcc ggg cat ggc atg ttt atg gat aaa ctt tct tct aag aag ttg tgt		96
Ala Gly His Gly Met Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys		
20 25 30		
gca gat gag gag tgt gtc tat acc att tct ctg gca aga gca cag gaa		144
Ala Asp Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu		
35 40 45		
gac tac aat gcc ccg gac tgt agg ttc atc aat gtc aag aaa ggg cag		192
Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln		
50 55 60		
cag atc tat gtt tat tcc aag ctg gta aca gaa aat gga gct ggg gca		240
Gln Ile Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Ala		
65 70 75 80		
ttc tgg gct ggc agt gtt tat ggt gac cac cag gat gag atg gga att		288
Phe Trp Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile		
85 90 95		
gtg ggt tat ttc ccc agc aac ttg gtt aga gag caa cga gtg tac cag		336
Val Gly Tyr Phe Pro Ser Asn Leu Val Arg Glu Gln Arg Val Tyr Gln		
100 105 110		

gag gcc acc aag gag att cca acc acg gat att gac ttc ttc tgt gaa 384
 Glu Ala Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 115 120 125

<210> 47
 <211> 128
 <212> PRT
 <213> Rattus sp.

<400> 47
 Met Ala Arg Ile Leu Ile Leu Leu Gly Gly Leu Val Ala Leu Cys
 1 5 10 15

Ala Gly His Gly Met Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys
 20 25 30

Ala Asp Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu
 35 40 45

Asp Tyr Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln
 50 55 60

Gln Ile Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Ala
 65 70 75 80

Phe Trp Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile
 85 90 95

Val Gly Tyr Phe Pro Ser Asn Leu Val Arg Glu Gln Arg Val Tyr Gln
 100 105 110

Glu Ala Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 115 120 125

<210> 48
 <211> 330
 <212> DNA
 <213> Rattus sp.

<220>
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<400> 48
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 His Gly Met Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala Asp
 1 5 10 15

gag gag tgt gtc tat acc att tct ctg gca aga gca cag gaa gac tac 96
 Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp Tyr
 20 25 30

aat gcc ccg gac tgt agg ttc atc aat gtc aag aaa ggg cag cag atc 144
 Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln Gln Ile
 35 40 45

tat gtt tat tcc aag ctg gta aca gaa aat gga gct ggg gca ttc tgg 192
 Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Ala Phe Trp
 50 55 60

gct ggc agt gtt tat ggt gac cac cag gat gag atg gga att gtg ggt 240
 Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile Val Gly
 65 70 75 80

tat ttc ccc agc aac ttg gtt aga gag caa cga gtg tac cag gag gcc 288
 Tyr Phe Pro Ser Asn Leu Val Arg Glu Gln Arg Val Tyr Gln Glu Ala
 85 90 95

acc aag gag att cca acc acg gat att gac ttc ttc tgt gaa 330
 Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 100 105 110

<210> 49
 <211> 110
 <212> PRT
 <213> Rattus sp.

<400> 49
 His Gly Met Phe Met Asp Lys Leu Ser Ser Lys Lys Leu Cys Ala Asp
 1 5 10 15

Glu Glu Cys Val Tyr Thr Ile Ser Leu Ala Arg Ala Gln Glu Asp Tyr
 20 25 30

Asn Ala Pro Asp Cys Arg Phe Ile Asn Val Lys Lys Gly Gln Gln Ile
 35 40 45

Tyr Val Tyr Ser Lys Leu Val Thr Glu Asn Gly Ala Gly Ala Phe Trp
 50 55 60

Ala Gly Ser Val Tyr Gly Asp His Gln Asp Glu Met Gly Ile Val Gly
 65 70 75 80

Tyr Phe Pro Ser Asn Leu Val Arg Glu Gln Arg Val Tyr Gln Glu Ala
 85 90 95

Thr Lys Glu Ile Pro Thr Thr Asp Ile Asp Phe Phe Cys Glu
 100 105 110

<210> 50
 <211> 18
 <212> PRT
 <213> Rattus sp.

<400> 50
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 1 5 10 15

Ala Gly

<210> 51
 <211> 130
 <212> PRT
 <213> Rattus sp.

<400> 51
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 1 5 10 15
 Ser Gly Leu Ser Arg Ala Asp Arg Ala Met Pro Lys Leu Ala Asp Arg
 20 25 30
 Lys Leu Cys Ala Asp Glu Glu Cys Ser His Pro Ile Ser Met Ala Val
 35 40 45
 Ala Leu Gln Asp Tyr Val Ala Pro Asp Cys Arg Phe Leu Thr Ile Tyr
 50 55 60
 Arg Gly Gln Val Val Tyr Val Phe Ser Lys Leu Lys Gly Arg Gly Arg
 65 70 75 80
 Leu Phe Trp Gly Gly Ser Val Gln Gly Asp Tyr Tyr Gly Asp Leu Ala
 85 90 95
 Ala His Leu Gly Tyr Phe Pro Ser Ser Ile Val Arg Glu Asp Leu Thr
 100 105 110
 Leu Lys Pro Gly Lys Val Asp Met Lys Thr Asp Glu Trp Asp Phe Tyr
 115 120 125
 Cys Gln
 130

<210> 52
 <211> 130
 <212> PRT
 <213> Bos sp.

<400> 52
 Met Ala Trp Ser Leu Val Phe Leu Gly Val Val Leu Leu Ser Ala Phe
 1 5 10 15
 Pro Gly Pro Ser Ala Gly Gly Arg Pro Met Pro Lys Leu Ala Asp Arg
 20 25 30
 Lys Met Cys Ala Asp Glu Glu Cys Ser His Pro Ile Ser Val Ala Val
 35 40 45
 Ala Leu Gln Asp Tyr Val Ala Pro Asp Cys Arg Phe Leu Thr Ile His
 50 55 60
 Gln Gly Gln Val Val Tyr Ile Phe Ser Lys Leu Lys Gly Arg Gly Arg
 65 70 75 80
 Leu Phe Trp Gly Gly Ser Val Gln Gly Asp Tyr Tyr Gly Asp Gly Ala
 85 90 95

20

Ala Arg Leu Gly Tyr Phe Pro Ser Ser Ile Val Arg Glu Asp Gln Thr
100 105 110

Leu Lys Pro Ala Lys Thr Asp Val Lys Thr Asp Ile Trp Asp Phe Tyr
115 120 125

Cys Gln
130

<210> 53
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Flag epitope
sequence

<400> 53
Asp Tyr Lys Asp Asp Asp Asp Lys
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